

## **REMARKS**

Claims 1-32 are currently pending in this application. Claims 1-15 are under examination. Claim 1 has been amended. Support for this amendment can be found throughout the specification and, for example, in abstract and Example 4. Applicants aver that the amendment to Claim 1 does not constitute or add new matter. Applicants respectfully request entry of the claims as amended and reexamination of the application in light of the following remarks.

### **CLAIM REJECTIONS UNDER 35 USC § 103**

Claims 1-15 have been rejected under 35 USC § 103 (a) as being unpatentable over Ramirez (U.S. 2002/0102345) in view of Chappel et al. (Food and Chemical Toxicology, 1998, vol. 36, pp.915-922).

The Office contends that Ramirez teaches a beverage composition comprising beer and caffeine (a methylxanthine). The Office acknowledges that Ramirez does not teach tetra-hydroisoalpa acid, but contends that Chappel et al. teach the addition of tetrahydroisohumulone to beer to provide bitterness and stability. The Office then concludes that one skilled in the art would have combined the two reference to arrive at the composition claimed because he or she “would be motivated to add a more stable and efficient bittering agent in order to overcome the problem of the beer not having a true taste of the bitterness in beer.” See Office Action, page 4. Applicants respectfully traverse.

Applicants submit that they have unexpectedly discovered that compositions of reduced isoalpa acids (e.g., tetra-hydroisoalpa acids) and methylxanthines (e.g., caffeine), when combined in certain amounts, have synergistic anti-inflammatory effects. See, e.g., the abstract and Example 4 of the application as filed. Accordingly, claim 1 has been amended to reflect these findings. Neither Ramirez nor Chappel et al., individually or in combination, teach or suggest the elements of “synergy” and “anti-inflammation” claimed and taught by the present invention.

Applicants describe in their application that “synergy was noted for all RIAA:caffeine combinations, albeit at different segments of the dose-response curves.” See Example 4 of the application as filed on page 47, paragraph 150, lines 3-4. This unexpected finding showed that while RIAA and caffeine could act synergistically over a wide range of ratios and concentrations as shown in Figures 7A-H of the specification, they could also act additively or even antagonistically at certain other concentrations. See Figures 7A-H and tabulated CI (Combination Index) values. The specification on page 42, paragraph 136, further defines CI values of <1, =1, and >1 to indicate synergism, additivity and antagonism, respectively.

Thus, in view of the present specification, the effectiveness (or the synergistic property) of a given combination of methyxanthine and reduced isoalpha acid was shown to be unpredictable. In the KSR decision, the Supreme Court reaffirmed that “[t]he combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *KSR*, 82 USPQ2d at 1395 1395-97 (2007); MPEP § 2141 guidelines for determining obviousness. However, as described above, by discovering synergism between the compounds claimed, Applicants have shown more than predictable results.

Therefore, in view of the information disclosed in the present specification and the amended claims, Applicants submit that at the time of filing of the application, a skilled artisan who was familiar with the teachings of Ramirez and Chappel et al. could not have distinguished between the additive or antagonistic and beneficially synergistic interactions of the compounds presently claimed. Nor could the skilled artisan have known about the anti-inflammatory properties of the composition. Accordingly, the skilled artisan would not have had a reasonable expectation of success in combining the agents of Ramirez and Chappel et al. to arrive at the presently claimed invention. As such, Applicants respectfully submit that the invention as claimed above is unobvious and request withdrawal of the 35 USC § 103(a) rejection.

## CONCLUSION


In light of the remarks herein, Applicants submit that the claims are in condition for allowance and respectfully request a notice to this effect. If there are any questions regarding these remarks, the Office is invited to contact the undersigned agent at the telephone number provided below.

To the extend necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to deposit account 50-1133 and please credit any excess fees to such deposit account.

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Respectfully submitted,

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